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ABSTRACT

The identification and treatment of anxiety and depression among incoming freshmen from six colleges of the Chinese Culture University, Taiwan, were undertaken by the University Mental Health Center. A total of 2,121 students from 53 departments were assessed using the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) (Zung, 1974, 1976, 1980), which were translated and adapted to the present culture. Raven's Progressive Matrices also were administered. At the end of the diagnostic survey, those students whose responses indicated moderate to severe levels of anxiety, or depression, or both were invited to go to the University Mental Health Center for interviews and further diagnostic procedures. The percentages of students whose mean SDS and SAS indices were above morbidity cut-off scores were about 30 percent for depression proneness and 22 percent for anxiety. Both of these findings are in basic agreement with Zung's cross-national findings on normal populations. Freshmen in the College of Arts and Humanities had significantly higher mean SDS and SAS indices than the other five colleges. The present 1980-81 findings for the entire freshman class are compared to those of the previous years, which consisted of randomly selected samples, and to findings of a study conducted in India. Intervention strategies include both group and individual measures (e.g., panel discussion on specific topics, psychodrama, interviews, and individual therapy). Depending on the needs of individual students, the intervention may vary from behavioral, nondirective, or directive to emotive-rational approaches. The Zung scales are presented and described, and a bibliography is appended. (SW)

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IDENTIFYING THE AFFECTIVELY HANDICAPPED AMONG THE UNIVERSITY FRESHMEN: A CROSS-CULTURAL APPROACH

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In Taiwan, ROC, higher education comprises junior colleges, colleges, universities and graduate institutes. Junior colleges aim at the teaching of applied sciences and training of technicians. Colleges, universities and graduate institutes provide advanced studies and preparation for specialization in chosen fields. Thirty years ago, there was one university, three colleges, three junior colleges and two graduate institutes with 6,665 students. Since then, the number of institutions of higher learning has kept on increasing. It was both the result of rapid economic development and pressing demand for specialized personnel, as well as rising parental expectations. Consequently, the number of institutions of higher learning in the 1980-1981 academic year rose to a record of 104, of which 16 are universities, 11 are colleges, and 77 junior colleges with a total of 213 affiliated graduate institutes. This represents an increase of 13.86 times during the interval. As to the number of students, it rose to a total of 342,528 registering an increase of 50.39 times.

Since 1973, the number of applicants for University Entrance Examination has been over 90,000. Take 1980 for example, it was recorded 97,180, while the number who passed

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was 28,426 consisting of 29.25% of all the applicants. It is a highly competitive examination, especially for those who vie for the prestigious public universities. The whole process of studying for progressively higher level and better schools that finally guarantee for greater probability of prestigious universities is now being coined "The Narrow Gate Syndrome" (Miao, 1981). Observers who have been to other Asian countries such as Japan, Korea, Singapore, Hongkong notice that these countries are also being affected by this syndrome.

As Director of the Mental Health and Guidance Center in one of the largest private universities in this country, the foremost concern is that the in-coming Freshmen will make the best of their opportunity for higher education after they have squeezed through the final and toughest Narrow Gate. Doubtless they all have above average learning potentials, and they also have the persistence for hard work. Therefore, if they should lag behind in performance, or manifest ineffectiveness or maladjustment in any form, it is mostly the result of affective disturbance. Hence the imperative need to identify the affectively disturbed Freshmen as an integral part of preventive mental health problem at the Center.

In Search of A Simple, Yet Valid and Reliable Tool.

With the determination to identify and alleviate the hidden affective handicap of our college youth, the next step was to search for a simple, yet valid and reliable tool. In 1975, this writer found it during a summer fellowship at the East-West Center in Hawaii. It is the Self-Rating Depression and Self-Rating Scales (SDS, SAS) constructed by Zung and associates.

Measurement of Affects: Depression and Anxiety

Zung developed the Self-Rating Depression and Self-Rating Anxiety Scales (Zung, 1965; 1967; 1969; 1974) as measurement of affects. In devising the Self-Rating Depression Scales (SDS) Zung used the clinical diagnostic criteria descriptive of the

feelings and concern that characterize depression. They are divided into four categories: pervasive affective disturbance, physiological disturbances, psychomotor disturbances, and psychological disturbances. Characteristics in each category are presented in Table I.

Table I. The criteria for the diagnosis of depressive disorders

I. Pervasive affective disturbances
   1. Depressed, sad, and blue
   2. Tearful
II. Physiological disturbances
   1. Diurnal variation: exaggeration of symptoms in the early morning and some relief as the day goes on
   2. Sleep: characteristically early or frequent waking
   3. Appetite: decreased food intake
   4. Weight loss: associated with decreased food intake, or increased metabolism and decreased rest
   5. Sex: decreased libido
   6. Gastrointestinal: constipation
   7. Cardiovascular: tachycardia
   8. Musculoskeletal: fatigue
III. Psychomotor disturbances
   1. Agitation
   2. Retardation
IV. Psychological disturbances
   1. Confusion
   2. Emptiness
   3. Hopelessness
   4. Indecisiveness
   5. Irritability
   6. Dissatisfaction
   7. Personal devaluation
   8. Suicidal rumination

Zung Self-Rating Depression Scale (SDS)

The scale was devised so that of the 20 items used 10 were worded symptomatically positive, and 10 symptomatically negative. In using the scale, the patient is asked to rate each of the 20 items as to how it applies to him at the time of testing in the following quantitative terms: none or a little of the time some of the time, good part of the time, most or all of the time. The use of four column headings was based on the fact that by using even number columns, it prevents subjects from checking middle or end columns in order to look average. Thus the SDS is constructed in such a way that the less depressed patient will have a lower score on the scale, and vise versa. In scoring the scale a value of 1, 2, 3 and 4 is assigned to a response depending upon whether the item was worded positively or negatively. An index for the SDS was derived by dividing the sum of the raw scores obtained on the 20 items by 80, and converted to a whole number which ranges from 25 – 100. (See Appendix A)

Zung Self-Rating Anxiety Scale.

Anxiety is defined in the Diagnostic and Statistical Manual, second edition (1968) as a neurosis characterized by anxious over-concern extending to panic and frequently associated with somatic symptoms, or a disorder identified by the various scales available in use. The fact that there is a need for assessing anxiety, whether as an affect, a symptom, or a disorder is obvious by the numerous rating scales in use. However, in Zung's opinion (Zung, 1974) the need for *a standardized method of evaluating and recording the presence of anxiety as a clinical disorder has not been met by most scales today.* Zung was thus interested in having a rating scale which would fulfill the following: it should be inclusive with respect to symptoms of anxiety as a psychiatric disorder, it should quantify the symptoms, and it should be short and simple.

The Anxiety Status Inventory (ASI) on next page contains

the diagnostic criteria of an anxiety disorder and their respective interview guide items (see Table 2). Its counterpart, the Self-Rating Anxiety Scale (SAS) was developed to fulfill the above-set purposes and needs (Zung, 1972). (See Appendix B)

Morbidity Cut-Off Score and Range of Severity

Morbidity cut-off score of 50 for both the SDS and SAS was adopted. It was based on Zung's cross-cultural and cross-national findings on studies with SDS which showed that patients with global ratings of mild to moderate depression had SDS indices between 50–59, patients with moderate to severe depression had indices of 60–69, and patients globally rated as severely depressed had indices of 70 and over. During the time when this writer conducted the series of studies with SDS and SAS, the morbidity cut-off score for SAS was also set as 50 by Zung. (Miao, 1976; 1977; 1978; 1979).

Validity and Reliability of the SDS

The validity of any rating instrument, that it measures what it is supposed to measure, can be determined by: (1) expert opinions that confirm that the signs and symptoms described in the scale represents a recognizable clinical conditions, and (2) demonstration that the results can distinguish patients with disorder under consideration, and correlate with other scales which are concede to be valid.

The first criterion was fulfilled when the scale's construction was based on available literature. Zung, however, stressed that the diagnostic criteria do not encompass all schools of psychiatric orientation. The emphasis was to formulate an operational definition that would satisfy diagnostician of any theoretical orientation. Symptoms and signs that had particular orientations were purposely left out. As to the second criterion, several studies performed have shown consistently that the SDS is able to distinguish patients with depressive disorders from other diagnostic categories at a statistically significant level.

Table 2. The Anxiety Status Inventory (ASI) containing the diagnostic criteria of an anxiety disorder and their respective interview guide items

Affective and somatic symptoms of anxiety	Interview guide for anxiety status inventory (ASI)	Severity of observed or reported responses			
		none	mild	mod	sev
1. Anxiousness	Do you ever feel nervous and anxious?	1	2	3	4
2. Fear	Have you ever felt afraid?	1	2	3	4
3. Panic	How easily do you get upset? Ever have panic spells or feel like it?	1	2	3	4
4. Mental disintegration	Do you ever feel like you're falling apart? Going to pieces?	1	2	3	4
5. Apprehension	Have you ever felt uneasy? or that something terrible was going to happen?	1	2	3	4
6. Tremors	Have you ever had times when you felt yourself trembling? shaking?	1	2	3	4
7. Body aches and pains	Do you have headaches? neck or back pains?	1	2	3	4
8. Easy fatigability, weakness	How easily do you get tired? Ever have spells of weakness?	1	2	3	4
9. Restlessness	Do you find yourself restless and can't sit still?	1	2	3	4
10. Palpitation	Have you ever felt that your heart was running away?	1	2	3	4
11. Dizziness	Do you have dizzy spells?	1	2	3	4
12. Faintness	Do you have fainting spells? or feel like it?	1	2	3	4
13. Dyspnea	Ever have trouble with your breathing?	1	2	3	4
14. Paresthesias	Ever have feelings of numbness and tingling in your fingertips? or around your mouth?	1	2	3	4
15. Nausea and vomiting	Do you ever feel sick in your stomach or feel like vomiting?	1	2	3	4
16. Urinary frequency	How often do you need to empty your bladder?	1	2	3	4
17. Sweating	Do you ever get wet, clammy hands?	1	2	3	4
18. Face flushing	Do you ever feel your face getting hot and blushing?	1	2	3	4
19. Insomnia	How have you been sleeping?	1	2	3	4
20. Nightmares	Do you have dreams that scare you?	1	2	3	4

©W. Zung, 1972.

(Zung, Richards, and Short, 1965; Zung, 1965; 1967). Other studies have been performed to demonstrate the significant correlation between the SDS and other depression scales such as the Hamilton, Beck, and the D Scale of MMPI (Zung, 1969; Brown and Zung, 1972).

The reliability of a scale, that it measures dependably the same each time, and that it is free from random irrelevant sources of error can be determined by: (1) inter-rater reliability, which in not applicable here because it is a self-rating scale, and (2) intercorrelation of items, tests of internal consistency, by item analysis or by split-half reliability correlations. The latter procedure was used and the odd-even item correlations were found to be 0.73 with $p<0.01$ (Zung, 1972).

Validity and Reliability of the SAS

The first criterion for validity of the SAS was also fulfilled when the scale was constructed and based on literature available. Zung stressed again that the diagnostic criteria were not meant to be all-inclusive, the list was, nevertheless, chosen to delineate the essential core symptons (see Table 2). As for the second criterion, several studies performed by Zung and associates was able to discriminate patients with anxiety disorders from other diagnostic categories at a statistically significant level (Zung, 1971; 1975). A study was also performed to demonstrate the correlation between the Hamilton Anxiety Scale (HAS) and the SAS. Results of the study, based on data obtained from 548 separate HAS and SAS ratings were analyzed using the Pearson-Product Moment Correlation for calculation of the coefficienter, which was 0.75 ($p<0.01$).

Cross-Cultural Studies Using the SDS and SAS

Cross-cultural and cross-national studies have been conducted by Zung to test the validity of SDS. Collaborators from Japan, Australia, Czechoslovakia, England, West Germany and Switzerland provided SDS data on population of psychiatric

patients (Zung, 1969). Results indicated that patients diagnosed as having depressive disorders in the countries studied had comparable values, and were significantly higher than nondepressed patients (p=(0.01). In 1972, as a further step towards establishing the efficacy of the operational definition set up in the SDS, a cross-cultural study of normal subjects was carried (Zung, 1972). Results of the study showed that the mean SDS indices of all subjects tested was below the 50 morbidity score. However, SDS indices of Czechoslovakia and Swedan were higher than the mean for all countries combined, and the mean SDS indices of England and the USA were significantly lower, thus demonstrating differences in depressive symptomatology in normal adults among the countries under investigation (see Table 3).

Table 3. A Comparison of the Self-Rating Depression Scale Results Obtained from the Countries Studied

Country	N	Self-Rating Depression Index, Mean & S.D.						
		Sex		Age				
		Men	Women	19	20-39	40-64	65	All Subjects
Czechoslovakia	697	52.2	55.3	46.9	51.6	54.9	59.4	53.4±13.8**
England	177	43.2	44.3	0	42.3	45.5	0	43.8±11.8*
Germany	64	48.0	47.0	64.7	47.3	42.7	0	47.5±14.2
Spain	597	43.8	47.3	46.1	42.8	45.2	52.6	45.2±10.4
Sweden	82	50.8	52.0	0	51.2	52.2	0	51.5±16.6**
U.S.A.	364	37.4	39.9	38.8	39.1	40.5	0	39.5± 9.6*
All countries 1981								All Ss 46.9±12.6

* Significantly lower SDS means (p<.01)

** Significantly higher SDS means (p<.01)

Zung was also interested in developing baseline data for normal subjects with varying degree of "risk", ranging from patients seen in a family practice setting to psychiatric patients with and without diagnosis of anxiety disorders. Using the total

data base available, a morbidity cutoff score was developed in order to establish the level at which individuals might be viewed as "well and not sick" and "sick and not well". Statistical analyses using the analysis of variance showed that the mean SAS index from the normal adults was significantly lower than those obtained from all patient groups ($p<0.01$) (see Table 4). One observes that a new morbidity SAS cut-off score of 45 is being used in Zung's recent study (Zung, 1978).

Zung mentioned that several studies using the SAS have been reported, and their results are in basic agreement with his findings. He cites this writer's study with 900 college students in Taiwan which reported a mean SAS index of 42.3 (s.d. 8.3) (Mine, 1976).

Table 4. Comparison of the Self-rating Anxiety Scale (SAS) indices among various groups tested, using a morbidity cut-off SAS index of 45

	SAS Index			SAS INDEX			
				44 and Under		45 and over	
Group	N	M	(s.d.)	N	(%)	N	(%)
Normal Adults	196	34.4	(6.9)	178	(91)	18	(9)
Patients							
Family Practice	101	41.8	(9.7)	69	(68)	32	(32)
Cardiac Service	567	45.5	(9.8)	281	(50)	286	(50)
Psychiatry Service							
Not Anxiety Disorder	111	48.8	(12.7)	327	(29)	784	(71)
Anxiety Disorder	403	58.8	(11.9)	46	(11)	357	(89)
Outpatients	(351)	58.7	(11.6)				
Inpatients	(52)	59.8	(14.3)				

Study in india Depressed vs. Non-Depressed. Cross-Cultural and Quantative Comparison.

A survey of symptomatology of depressed patients and

normal subjects in India was conducted. (Master and Zung, 1975) Results obtained from 430 depressed and 97 normal subjects showed that the depressives scored significantly higher on 18 of the 20 individual items of the SDS, as well as the SDS index, than did normals ($p<0.01$). Correlation between the physician's global rating of the patient's depression and patient's own self-rating was 0.74 ($p<0.01$). A comparison of these results from India with those previously obtained from U.S.A., Japan, Czechoslovakia, England, Germany and Netherlands showed that depressives and normals scored similarly in all the countries studied. (See Table 5 below and Table 14 on subsequent page as well as Appendix C)

Table 5. Mean Self-rating Depression Scale (SDS) indices of patients with depressive disorders, and normal control subjects tested in various countries.

	DEPRESSED PATIENTS		NORMAL CONTROLS	
COUNTRY	Mean SDS Index	(s.d.)	Mean SDS Index	(s.d.)
U.S.A.	63.7	(14.1)	39.5	(9.6)
Japan	61.9	(6.9)	36.5	(12.2)
Czechoslovakia	61.5	(12.5)	53.4	(13.8)
England	61.8	(10.5)	43.8	(11.8)
Germany	65.1	(10.8)	47.5	(14.2)
Netherlands	66.1	(11.7)	39.9	(8.0)
India	69.8	(12.8)	45.6	(11.9)

Review of Previous Studies at the CCU Mental Health Center

Utilizing Zung's Self-Rating Anxiety and Self-Rating Depression scales, several studies had been conducted to investigate the mental health status of college students in the University of

Chinese Culture. (Miao, 1976; 1977; 1978; 1979). In the first study, 581 subjects were drawn from the Freshman class of the academic year, 1975-1976, in the Chinese Culture University, and 328 from the Department of Educational Psychology in the Taiwan National Normal University. Total number was 909, with 534 male and 375 female students. While they all took the SAS and SDS, 320 were drawn from the sample (201 male, 119 female) to receive an additional test, the Ko's Mental Health Questionnaire (KMHQ, 1972; 1973; 1975), specifically, its Sub-scale V which purports to measure depression proneness, and Sub-scale VI which measures anxiety proneness. Results of this study were:

1. Mental health status of the college Freshmen under investigation yielded a mean SDS index of *43.52* and a mean SAS index of *42.24*. Compared with Zung's cross-national research findings, the mean SDS index for normal population tested was below the 50 morbidity score. Looking at the 19 age group, it was lower, than the findings in Spain, Czechoslovakia and Germany, but higher than the USA. Cross-national comparison of SAS indices was only based on a study made in the USA. The USA SAS index was 34.4.
2. Percentage of subjects revealed as depression prone was higher than Zung's cross-national findings (76.18% non-depression prone and 23.82 depression prone vs Zung's 88% and 12% in normal population). The SAS result for above and below morbidity percentage distribution had a similar trend. It is 82.66% non-anxiety prone, 17.66% anxiety prone vs Zung's 91% and 9%. However, Zung mentioned that higher SDS baseline values for subjects younger than 19 were observed in cross-national data.
3. While there was no significant difference among the Freshmen in the two institutions under investigation, some signi-

ficant inter-departmental differences within the Chinese Culture University were supported. Arts and Language major as a whole had significantly higher level of depression and anxiety proneness. ($p<0.01$)

4. Overall significant sex difference in the study was partially supported ($p<0.05$)
5. There was significant relation between Subscales V (Depression) and VI (Anxiety) in Ko's Mental Health Questionnaire (KMHQ) and Zung's Self-Rating Depression and Anxiety Scales (SDS, SAS) (at 0.01).

In the subsequent academic year, 1976 -1977, a study on the Seniors in the Chinese Culture University was conducted as a sequel and extension of the previous study. Subjects were 480 Seniors drawn from the graduating classes of 23 departments. A personal background questionnaire was added to the administration of the Zung's Self-Rating Depression and Self-Rating Anxiety Scales (SDS, SAS). Available data yielded the following results:

1. Mental health status of the Seniors under investigation as measured by Zung's Self-Rating Depression and Self-Rating Anxiety Scales (SDS, SAS) yielded a mean SDS index of 41.38, and a mean SAS index of 42.11. The results also indicated 84.37% of the subjects were scored under the morbidity cut-off point set be Zung's findings, in SAS, and 78.54% were under the morbidity cut-off points in SDS. (see Table 10).
2. The Seniors yielded a very significantly lower depression prone level when compared with the Freshmen. ($p<0.01$)
3. Cross-cultural and cross-national comparison placed the mean SDS index of the seniors, 41.38 at a second ranking position in the 20--39 age group (see Table 3).
4. The Seniors' self-perception of college achievement was significantly related to differential levels of anxiety and

with previous studies and cross-national findings?

3. What are the mean SDS item indices? How do they compare with cross-cultural results?

RESULTS

Table 6 below presents the SAS and SDS indices of all Freshmen investigated in the six colleges of the university.

Table 6. SAS and SDS Indices of Freshmen in Six Colleges of Chinese Culture University, 1980-1981.

SCALES		SAS			SDS		
College	No. departments	X	SD	N	X	SD	N
Arts	16	44.39	8.96	698	46.21	9.45	697
Science	13	43.46	8.53	464	45.09	9.89	463
Law	8	42.16	7.82	375	44.04	10.02	376
Business	2	42.88	8.78	97	44.05	8.60	97
Agriculture	8	42.76	8.52	263	44.13	9.65	(not legible)
Engineering	6	42.46	8.42	224	43.95	8.85	224
	General Mean Indices	43.02	8.54	2121	44.98	9.57	2117

Submitting the above tabulated data to t test of significance, the results are presented in Tables 7, 8 and 9.

Table 7. Comparison of Mean SAS Indices Among the Six Colleges

Colleges	Arts	Science	Law	Business	Agriculture
Science	1.78*	-	-	-	-
Law	4.23**	2.30*	-	-	-
Business	1.58	0.59	0.74	-	-
Agriculture	2.61**	1.04	0.91	0.12	-
Engineering	2.94**	1.45	0.43	0.40	0.39

** $p<0.01$ t .99=2.326

* $p<0.05$ t .95=1.645

depression.

5. Finally, comparison of mean SDS item indices between the Seniors and an Indian sample revealed that each group had its higher score items. The higher scores in the Taipei study leaned more toward pervasive affective disturbance; while those in the Indian study leaned more toward psychological disturbance.

For the subsequent two years, i.e., 1978–1979; 1979–1980, the continued study of SDS and SAS was primarily for preventive mental health program. The findings approximated those in the previous studies. Since most of those who were identified in the categories of moderate to severe anxiety or depression, or both were being helped through a multi-modal therapeutic process, decision was made to extend the study to the entire population of Freshmen in the academic year of 1980–1981.

The Study in the Academic Year, 1980–1981.

Subjects

Freshmen from six colleges in the University with a total of 53 departments were subjects of this study. They were in all 2121. The administration of the SDS and SAS together with the Raven's Progressive Matrices were done during the free periods in different departments. Cooperation and coordination had been most satisfactory during the four weeks of testing. It was all done in a spacious reading room adjacent to the Center.

Research Questions

Three research questions were formulated to guide subsequent tabulation and statistical analysis of available data:

1. What are the SDS and SAS indices of the Freshmen in the six different colleges in the University? Are they significantly different?
2. What is the distribution of subjects above and below SDS and SAS morbidity cut-off score? How do they compare

Table 8. Comparison of Mean SDS Indices Among the Six Colleges

College	Arts	Science	Law	Business	Agriculture
Science	1.92*	–	–	–	–
Law	3.45**	1.52	–	–	–
Business	2.29*	1.05	0.01	–	–
Agriculture	2.98**	1.27	0.11	0.08	–
Engineering	3.27**	1.52	0.11	0.09	0.21

** p<0.01 t .99=2.326

* p<0.05 t .95=1.645

Table 9. Comparison of General Mean SAS and SDS Indices with those of Individual Colleges.

		Individual Mean					
		Arts	Science	Law	Business	Agriculture	Engineering
General Mean	SAS	3.54**	1.01	1.94*	0.15	0.47	0.95
	SDS	2.97**	0.22	1.69*	1.04	1.34	1.64

Statistical analysis in Table 7 revealed that Freshmen in the College of Arts had very significantly higher self-rated anxiety than those in the Colleges of Law, Agriculture and Engineering ($p<0.01$) Furthermore, the College of Science had significantly higher self-rated anxiety proneness than that of the College of Law ($p<0.05$).

T test analysis in Table 8 revealed that the Freshmen in the College of Arts had very significantly to significantly higher ($p<0.01$ 0.05) self-rated depression proneness than all the other 5 colleges.

In Table 9, comparing the general mean of SAS and SDS indices with each college, Arts' mean indices in both scales were very significantly higher; and were also significantly higher than those of the College of Law.

Table 10 presents the distribution of subjects above and below the SAS and SDS morbidity cut-off scores as it compared

with results of previous studies.

Table 10. Percentage of Subjects Above and Below SAS, SDS Morbidity Cut-Off Score, 1975–1980.

Academic Year	Ss		% of Ss below Morbidity		% of Ss above Morbidity					
					Mild		Moderate		Severe	
			25.00–48.75		50.00–58.75		60.00–68.75		70.00–	
	n		n	%	n	%	n	%	n	%
1976	581	SAS	480	82.62%	80	13.76%	14	2.41%	7	1.20%
		SDS	430	74.01%	124	21.34%	24	4.13%	3	0.52%
1976	480	SAS	405	84.37%	56	11.67%	14	2.92%	5	1.04%
		SDS	377	78.54%	82	17.08%	19	3.96%	2	0.42%
1977	523	SAS	432	82.60%	71	13.57%	18	3.45%	2	0.38%
		SDS	412	78.78%	80	15.30%	25	4.78%	6	1.15%
1979	285	SAS	223	78.25%	51	12.63%	10	2.80%	1	0.4%
		SDS	240	84.21%	36	17.89%	8	3.50%	1	0.4%
1980	2121	SAS	1652	77.89%	371	17.49%	86	4.05%	12	0.56%
		SDS	1471	69.35%	481	22.72%	142	6.70%	13	1.08%

Total 3990

* In 1976, SAS and SDS were adminstered to the Seniors.

Tables 11, 12 and 13 present the results of the Z Tests of significance of comparison of the differential percentages of subjects above and below the SAS and SDS morbidity cut-off score.

Table 11. Comparison of SAS and SDS Results of Entire Freshmen Population and Random Samples of Chinese Culture University Freshmen, Percentage below Morbidity Cut-Off Score. 1975–1980

Scale	Year	1975	1977	1979
SAS	1980	2.48*	2.36*	0.14
SDS	1980	2.12*	4.21**	5.15**

** p<0.01 (Z=2.58)

* p<0.05 (Z= .96)

very significantly lower than those of 1977 and 1979.

The Z test of significance results in Table 12 revealed that the percentage of students in the Senior sample of 1976 has significantly higher percentage of Mean SAS indices below morbidity cut-off score when compared with the Freshmen sample of 1979. When compared with the entire Freshmen sample they were very significantly higher in both the SDS and SAS percentage below the morbidity cut-off score.

The Z test of significance results in Table 13 revealed that the entire Freshmen population when compared with the combined random samples of Freshmen of 1975, 1977 and 1979 had very signficantly lower percentage of students whose mean SAS and SDS indices were below the morbidity cut-off score.

Finally, Table 14 presents the results of t test of significance at the comparison of SDS item scores obtained from the 1980 Chinese Culture University Freshmen sample and normal controls in an Indian study (Master and Zung, 1975.)

There are 7 items in the Taiwan sample that higher than those in the Indian study; namely: nos 6, 2, 9. 1, 13, 15 and 17. Three of them were very significantly higher. As to the Indian study, there were 5 items higher, 4 of which were very signficantly higher. The items were nos. 11, 5, 12, 16 and 19.

	Taiwan Sample	Indian Sample
Item 6	Physiological disturbance, decreased libido.	Item 11 Psychological Item 5 Psychological
Item 2	Pervasive affective	Item 12 Psychological
Item 9	Physiological disturbance	Item 16 Psychological
Item 1	Pervasive affective	Item 19 Psychological (suicidal rumination)
Item 13	Psychological	
Item 15	Psychological	
Item 17	Psychological (Personal Devaluation)	

Table 12. Comparison of SAS and SDS Results of Freshmen and Seniors, 1975–1980, Percentage Below Morbidity Cut-Off Score

Scale	Year	1975	1977	1979	1980
	(Seniors)		(Freshmen)		
SAS	1976	0.76	0.75	2.13*	3.15**
SDS	1976	1.72	0.09	1.92	3.95**

** p<0.01
* p<0.05

Table 13. Comparison of SAS and SDS Results of Combined Random Samples of Freshmen and Entire Freshmen Population, Percentage Below Morbidity Cut-Off Score.

Scale	Subjects	Entire Freshmen
SAS	Combined random sample of Freshmen	2.74**
SDS	Combined random sample of Freshmen	5.47**

** p<0.01
* p<0.05

Table 11 revealed that the Z test of significance had the following results: (1) The entire freshmen population had significantly lower percentage of students whose Mean SAS indices were below morbidity cut-off score, when compared with the random samples of Freshmen of the academic years of 1975 and 1977. (2) *The entire Freshmen population* has significantly lower percentage of students whose mean SDS indices were below the morbidity cut-off score when compared with the random sample of Freshmen of 1975, and furthermore,

Table 14. Comparison of SDS Item Scores Obtained from Normal Controls in Taiwan and India

Item	Taiwan n=2117		India n=97		t
	m	sd	m	sd	
1. I feel down-hearted and blue.	1.87	0.72	1.7	0.9	1.83*
2. Morning is when I feel the best.	2.06	1.02	1.7	0.9	3.83**
3. I have crying spells or feel like it.	1.34	1.58	1.3	0.7	0.55
4. I have trouble sleeping through the night.	1.58	0.78	1.6	1.0	0.19
5. I eat as much as I used to.	1.60	0.86	2.2	1.4	4.18**
6. I enjoy looking at, talking to and being with attractive women (men).	2.24	0.95	1.8	1.2	5.02**
7. I notice I am losing weight.	1.57	0.74	1.5	1.0	0.68
8. I have trouble with constipation.	1.33	0.61	1.3	0.9	0.32
9. My heart beats faster then unusal.	1.49	0.62	1.2	0.7	4.01**
10. I get tired for no reason.	1.60	0.73	1.5	0.8	1.21
11. My mind is as clear as it used to be.	1.79	0.94	3.1	1.2	10.60**
12. I find it easy to do the things I used to.	1.56	0.85	1.8	1.2	1.95*
13. I am restless and can't keep still.	1.67	0.74	1.5	1.0	1.85*
14. I feel hopeful about the future.	1.89	0.96	1.9	1.2	0.08
15. I am more irritable than usual.	1.78	0.80	1.6	1.0	1.75*
16. I feel it easy to make decision.	2.13	0.98	2.9	1.3	5.76**
17. I feel that I am useful and needed.	2.22	0.93	2.0	1.1	2.29*
18. My life is pretty full.	2.10	0.64	2.1	1.3	0
19. I feel that others would be better off if I were dead.	1.22	0.60	1.7	1.2	3.82**
20. I still enjoy the things I used to.	1.57	0.82	1.7	1.1	1.15
Mean SDS indices and S.D.	44.98	s.d. 9.6	45.6	11.9	

** p<0.01 (t.99=2.3261) Score ranges from 1–4

* p<0.05 (t.95=1.645)

Presented on the previous page are the two sets of higher items in each study and their diagnostic characteristic according to the criteria in Table 1.

The above qualitative analysis of the higher items in each sample denotes that personal devaluation seemed to have accounted for the affective and psychological disturbances of the Taipei sample. Difficulty in doing things and thinking clearly, on the other hand, seems to have led to the psychological disturbance of the Indian sample.

Conclusion

Based on the above-presented quantitative and qualitative analyses, the following conclusions may be inferred:

1. The SDS and SAS indices of the entire 2121 Freshmen population of the Chinese Culture University in the academic year of 1980–1981 were 44.98 (s.d. 9.57) and 43.02 (s.d. 8.54). Both were in basic agreement with Zung's cross-national findings on normal population.
2. Comparing the six colleges in the University, the College of Arts and Humanities had very significantly higher mean SAS index 44.39 (s.d. 8.96) than those in the Colleges of Law (42.16, s.d. 7.86), Agriculture (42.76, s.d. 8.52), and Engineering (42.46, s.d. 8.42), $p<0.01$. Furthermore, that of the College of Science was significantly higher than the College of Law.
3. Freshmen in the College of Arts and Humanities had significantly to very significantly higher mean SDS index than the other five colleges ($p=0.05-0.01$).
4. Comparing the general mean SDS and SAS indices with those of the six colleges in the University, those of the College of Arts and Humanities were very significantly higher ($p<0.01$); whereas those of the College of Law were significantly lower ($p<0.05$).
5. In comparing the percentage of students whose mean SAS

and SDS indices were below the morbidity cut-off score of 50, the present study on the entire Freshmen population yielded a significantly to very significantly lower percentage than the three randomly selected samples of previous years ($p=<0.05-0.01$). And it was very significantly lower compared with the combined random samples.

6. Comparing the results of the entire Freshmen population with a sample of Seniors, the percentage of those lower SDS and SAS morbidity cut-off score was very significantly lower for the former. ($p=<0.01$).
7. Finally, comparing the SDS item scores of the present study with those of a study made in India, there were 7 items with significantly to very significantly higher mean scores in the former study; and 5 items with 4 of which were very significantly higher in the latter study. A gualitative analysis of this result revealed that the diagnostic characteristic of the item score result in the Taiwan study leaned toward affective disturbances from probable personal devaluation. That of the Indian study appeared to lean toward psychological disturbances probably from decreased ability in thinking and doing things.

Two major conclusions may be summarized as follows:

Firstly, by investigating the entire Freshmen population instead of a random sample, greater number of students with affective disturbances that might handicap them in their college experience were identified.

Secondly, the item score analysis had identified the "What" and "Where" of the predominent diagnostic characteristic of the affective disturbance of the subjects under investigation. This revelation helps pave the way to probe further for the "Why" and implement the "How" for students with differential degree of affective needs.

Implications for Preventive Mental Health and Future Research.

As stated in the beginning of this paper, the purpose of the continuing research effort at the Mental Health Center of a private university in Taiwan, ROC, is to identify the affectively handicapped Freshmen and provide them with necessary intervention. It is not easy for the youth in this country to pass the highly competitive college entrance examination. And so it would indeed be tragic for them to waste their college years simply because the mental health personnel fail to help them in time.

Utilizing the Zung Self-Rating Depression and Self-Rating Anxiety Scales (SDS, SAS) as research instruments, several studies had been conducted (Miao, 1976; 1977; 1979). Results revealed that the mean SDS and SAS indices were in basic agreement with Zung's cross-cultural and cross-national findings on normal population. However, the percentages of students investigated whose mean SDS and SAS indices were above morbidity cut-off score were higher than Zung's findings. Across the years, the Center had been able to alleviate the affective disturbance of many students who were identified through this research. Since it was speculated that more students in need could be reached if the entire Freshmen population were involved in the research, the Center launched into a major effort in the academic year of 1980–1981. As reported in the afore-presented quantitative and qualitative analyses of this study, a greater percentage of students in need of intervention did emerge. The percentages of those students whose mean SDS and SAS indices were above mobidity cut-off score were close 30% for depression proneness, and 22% for anxiety; whereas Zung's findings for normal population were 12% for the former and 9% for the latter. It is true that he mentioned that higher baseline should be allowed for the younger than 19 age group, and the Freshmen do belong to this group. Available data, nevertheless, warrant increased effort toward an effective preventive mental health program.

Goal and Strategies

The goal and strategies of intervention procedures will be delineated according to the distribution of students with differential needs, and the three levels of work pertained to a preventive mental health program. The plan is as follows:

SDS Below 50	50–59	60–69	70–
69.35%	23.72%	6.7%	1.08%
n 1652	n 481	n 142	n 13
Primary Preventive	Secondary Preventive	Tertiary Preventive	

The goal of primary preventive mental health measures is to discover and remove the causes for affective disturbances on the one hand; and on the other hand, to strengthen adaptation and coping resources, and a sense of responsibility.

Strategies include using the University Assembly Hour, Freshmen Orientation or Dormitory Morning Meeting for group guidance and inspirational lectures. Special speakers were invited to speak on various subjects, from Goal of Higher Education to the Art of Heterosexual Relationship. Psychiatrists would explain symptomatology and prevention of emotional maladjustment. Very often research findings on psychological status of college students were topics of the lectures. This information promotes self-understanding as well as motivation to excel. This level of preventive work reaches not only the Freshmen but also the entire student body in the University.

The goal of secondary preventive mental health measures is early identification and early intervention.

In the present study, for example, the target of service refers to the near 24% of Freshmen whose mean SDS index fell between 50–59 as well as the 18% whose SAS index was within a similar range. The strategies for intervention include

both group and individual measures. Group measures include panel discussion on specific topics or small discussion sessions. The number of participants varies from 10 to not more than 30. Recently, psychodrama and social drama have been well received and helpful to many students. Individual measures range from interviews to therapeutic sessions. Sometimes the students may only need situational intervention, for example, allocation of dormitory or arrangement with older students to help in the adjustment period. Some, however, need therapeutic sessions. Depending on the needs of individual student, the intervention may vary from behavioral, non-directive, directive to emotive-rational approach. The ease and experience of the therapist also decides the choice of method. Further testing is also used to provide more objective information or a convenient handle to establish rapport.

The goal of tertiary preventive mental health measures is treatment and rehabilitation for those students who have gone through psychiatric treatment. In the present study, the target of service refers to the 1.08% of students with SDS indices over 70; or the 0.56% of those whose SAS indices had a similar range.

Strategies for intervention are two. If the therapists at the center feel that the students can be helped through intensive therapeutic sessions alone or at the same time receiving psychiatric treatment, then the Center would take up the responsibility for intervention. Otherwise, the students would be referred to psychiatric treatment. If necessary, the students would be advised to discontinue his residence in the University for a period of time.

This writer has found the Luscher Color Test (Luscher, 1948; 1969) a very useful tool in therapeutic session. As it may not only locate sources of stresses, nature of problems, but also work prognosis, the counselee in most cases found the analysis very enlightening.

In the future, continuing research should be extended to more people, not only college youth of other institutions of higher education, but also to all age groups. To investigate the factor loadings of SAS and SDS items, and find out how they compare with cross-cultural findings is another possible extension. One worthwhile area in future research is to study the status of affects of front desk office clerks in some government organizations. Since their friendly attitudes and services are often a function of their status of affects. It will certainly enhance the image and efficiency of the organization if the affectively handicapped are identified. Finally, collaborated cross-national research may also involve more Asian-Pacific countries.

In the International Year of the Disabled, concern should indeed exceed a focus on the physically and mentally disabled. The affectively disabled who very often are unnoticeable must not be overlooked. The loss they cause themselves and society if undetected and unattended is inestimable. Hence the importance of national, regional and multi-national preventive mental health research and program for the affectively handicapped.

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